College Board
SpringBoard Algebra 1, Algebra I

Degree of Evidence regarding the Standards for Mathematical Practice:

Moderate Evidence

Summary of evidence:

1. **Make sense of problems and persevere in solving them**. There are many opportunities for students to make sense and meaning in real-world problems (e.g. p. 84 #1, p. 70 #8, 9, & 10). Each chapter reviewed containes many open-ended questions. Students frequently use multiple representations (tables, graphs, equations, and situations) and make connections among them. Multiple approaches are frequently given. Students are asked to reflect on their answers in context of the real-world situations. Understanding of the mathematical concept is at the forefront of the lessons, and making sense of concepts was fundamental in the chapters reviewed.
2. **Reason abstractly and quantitatively**. There are regular opportunities to apply mathematical ideas, not just the algorithm. Several examples and questions apply mathematics in the context of the real world (e.g. pp. 121, 124). Students are asked to take real-world situations and represent them in symbols throughout the chapters (e.g. stacking boxes – starts p. 107). Because of the frequency of real-world problems, units are central to the student's work. Rarely are students asked to consider reasonableness. Real-world situations are used to introduce topics in the chapters reviewed, and then students generalize the mathematics of interest. There are opportunities for students to practice with mathematical symbols without context as well as many opportunities for them to make sense of symbols in context.
3. **Construct viable arguments and critique the reasoning of others**. There are extensive opportunities for justification. Most questions have an explain component (e.g. p. 70 #1, 2, 5, 11). Students look at flawed examples and explain why they do not work (e.g. p. 76 #2). There are many opportunities for students to make and test conjectures. Students are required to explain their reasoning on most questions. Frequently students are asked to communicate with others about their understanding of mathematics. Many of the communication opportunities are referenced in both the teacher guide and student book.
4. **Model with mathematics**. Students often create mathematical models for real-world situations (e.g. building a linear model – stacking cups – begins p. 103). Frequently students are asked to make sense of their answer in context of a real-world situation. Models are used to helps students understand difficult mathematical concepts (e.g. p. 244). Challenging mathematical ideas are also modeled by real-world situations (e.g. soda machine – p. 68). The chapters reviewed were centered on creating and using mathematical models.
5. **Use appropriate tools strategically.** Graphing calculators are often referenced (e.g. Chapter 5). Algebra software is referenced occasionally (e.g. p. 129). In the chapters reviewed, there is no contrasting of different technologies. Concrete models and manipulatives are used. There is some discussion/questioning about advantages and shortcomings of tools (e.g. p. 247, p. 72 #16). Students are given the opportunity to explore mathematics through technology.
6. **Attend to precision.** Students are given frequent opportunities to communicate about mathematics. References to this communication are made in the teacher edition as well as the student edition (e.g. p. 93). Examples use proper notation and are precise. Symbols and proper notation are used to develop ideas (e.g. slope formula – p. 85). In the chapters reviewed, examples of precise communication, for example a sample student conversation in the teacher's edition, were not present. There is attention to precision in the examples, but no discussion for students to tackle.

7. **Look for and make use of structure**. Student use prior learning to learn new concepts, and they use patterns to generalize and learn about mathematical structure (e.g. Transformations – p. 292). Students look for patterns in structure (e.g. p. 247), and patterns are frequently used for students to generalize about mathematics. Connections to students'prior learning is referenced throughout.
8. **Look for and express regularity in repeated reasoning.** Students use repetition to recognize patterns and make generalizations (e.g. p. 85 #9; slope-intercept form of a line, p. 115). There is some opportunity for students to use patterns to discover shortcuts for themselves. Patterns are used to help students see and make generalizations.